

CLAIMS

1. A neutral section (1) for use with an overhead railway conductor line, which neutral section (1) is disposed between the ends of said conductor line when in use and comprises an insulator (10) to isolate the ends of said
5 conductor line from each other; wherein the neutral axis of the neutral section (1) is such that when the neutral section (1) is in use the neutral axis is aligned closely with the neutral axis of the conductors on its either side and the height of said insulator (10) is chosen so that the stiffness and the dynamic mass of the neutral section (1) closely match those of the conductors on its either side in
10 both the vertical and horizontal planes.
2. A neutral section as claimed in claim 1, wherein the insulator (10) is formed from a glass-fibre reinforced epoxy composite.
3. A neutral section as claimed in claim 2, wherein the glass-fibre reinforced epoxy composite contains a 45% glass fraction.
- 15 4. A neutral section as claimed in any preceding claim, further comprising connection members (2) for connecting the neutral section (1) to each end of said conductor line.
5. A neutral section as claimed in claim 4, wherein each connection member (2) is a U-shaped member with two legs (3, 4), said two legs (3, 4) protruding
20 outwardly from the neutral section (1).
6. A neutral section as claimed in claim 5, wherein one of said two legs (4) is used for connecting the neutral section (1) to one end of said conductor line.
7. A neutral section as claimed in claim 5 or 6, wherein the other of said two legs (3) can serve as an arcing horn.
- 25 8. A neutral section as claimed in any one of claims 4 to 7, wherein pegs (5) are provided on the outer surface of each connection member (2).
9. A neutral section as claimed in any preceding claim, further comprising a low-friction member for providing a continuous running surface between the neutral section (1) and each end of said conductor line, said low-friction
30 member being disposed on the underside of the neutral section (1) and lying parallel to the ends of the conductor line when the neutral section (1) is in use.
10. A neutral section as claimed in claim 9, wherein said low friction member is made of a low friction material.
11. A neutral section as claimed in claim 9 or 10, wherein glass beads are
35 incorporated in the low-friction member.

12. A neutral section as claimed in any one of claims 9 to 11, wherein said low friction material is PTFE.

13. A neutral section as claimed in any one of claims 9 to 12, comprising two such low friction members forming a pair of rails (6, 7).

5 14. A neutral section as claimed in any preceding claim, wherein a semiconductor tape is attached to the spine of the neutral section (1).

15. A neutral section as claimed in any preceding claim, wherein electrical plates (11) are attached to the spine of the neutral section (1).

10 16. A neutral section as claimed in claim 15, wherein each of said electrical plates (11) are made of epoxy resin with chopped strand glass fibre reinforcement.

17. A neutral section as claimed in claim 15 or 16, wherein the plates (11) are spaced at a distance of 100mm or more.

15 18. A neutral section as claimed in any one of claims 15 to 17, wherein the plates (11) have spherical surfaces.

19. A neutral section as claimed in any preceding claim, wherein the leading ends of the neutral section (1) are upturned.

20. A neutral section as claimed in any preceding claim, wherein a heater is incorporated in the moulding of the insulator (10).

20 21. A neutral section as claimed in claim 20, wherein the heater has a wattage of 150 W.

22. A neutral section as claimed in any one of claims 20 or 21, wherein at least one temperature limiting resistor is connected in series to the heater.

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AMENDED CLAIMS

**[received by the International Bureau on 09 November 2004 (09.11.04);
original claim 1 amended; remaining claims unchanged (1 page)]**

1. A neutral section (1) for use with an overhead railway conductor line, which neutral section (1) is disposed between the ends of said conductor line when in use, the neutral section (1) comprising an insulator (10) having a single, integral body to isolate the ends of said conductor line from each other; wherein the profile of the neutral section (1) is designed such that, when the neutral section (1) is in use, its neutral axis is aligned closely with the neutral axis of the conductors on its either side and the height of said insulator (10) is chosen so that the stiffness and the dynamic mass of the neutral section (1) closely match those of the conductors on its either side in both the vertical and horizontal planes.
2. A neutral section as claimed in claim 1, wherein the insulator (10) is formed from a glass-fibre reinforced epoxy composite.
3. A neutral section as claimed in claim 2, wherein the glass-fibre reinforced epoxy composite contains a 45% glass fraction.
4. A neutral section as claimed in any preceding claim, further comprising connection members (2) for connecting the neutral section (1) to each end of said conductor line.
5. A neutral section as claimed in claim 4, wherein each connection member (2) is a U-shaped member with two legs (3, 4), said two legs (3, 4) protruding outwardly from the neutral section (1).
6. A neutral section as claimed in claim 5, wherein one of said two legs (4) is used for connecting the neutral section (1) to one end of said conductor line.
7. A neutral section as claimed in claim 5 or 6, wherein the other of said two legs (3) can serve as an arcing horn.
8. A neutral section as claimed in any one of claims 4 to 7, wherein pegs (5) are provided on the outer surface of each connection member (2).
9. A neutral section as claimed in any preceding claim, further comprising a low-friction member for providing a continuous running surface between the neutral section (1) and each end of said conductor line, said low-friction member being disposed on the underside of the neutral section (1) and lying parallel to the ends of the conductor line when the neutral section (1) is in use.
10. A neutral section as claimed in claim 9, wherein said low friction member is made of a low friction material.
11. A neutral section as claimed in claim 9 or 10, wherein glass beads are incorporated in the low-friction member.